# Introduction to QuickTime Streaming Server

## Real-time Streaming Overview

Session 704

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## Real-time Streaming Overview

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# Introduction to QuickTime Streaming Server

## Real-time Streaming Overview

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# Introduction

- Introduction to the topic of real-time streaming
- Provide setup and configuration to shorten your learning curve
- Focus on QuickTime Streaming Server (QTSS) and QuickTime Broadcaster (QTB)
- Cover some new features added in QTSS 5 (Panther Server)
- Provide some real-world steps so you can try it yourself

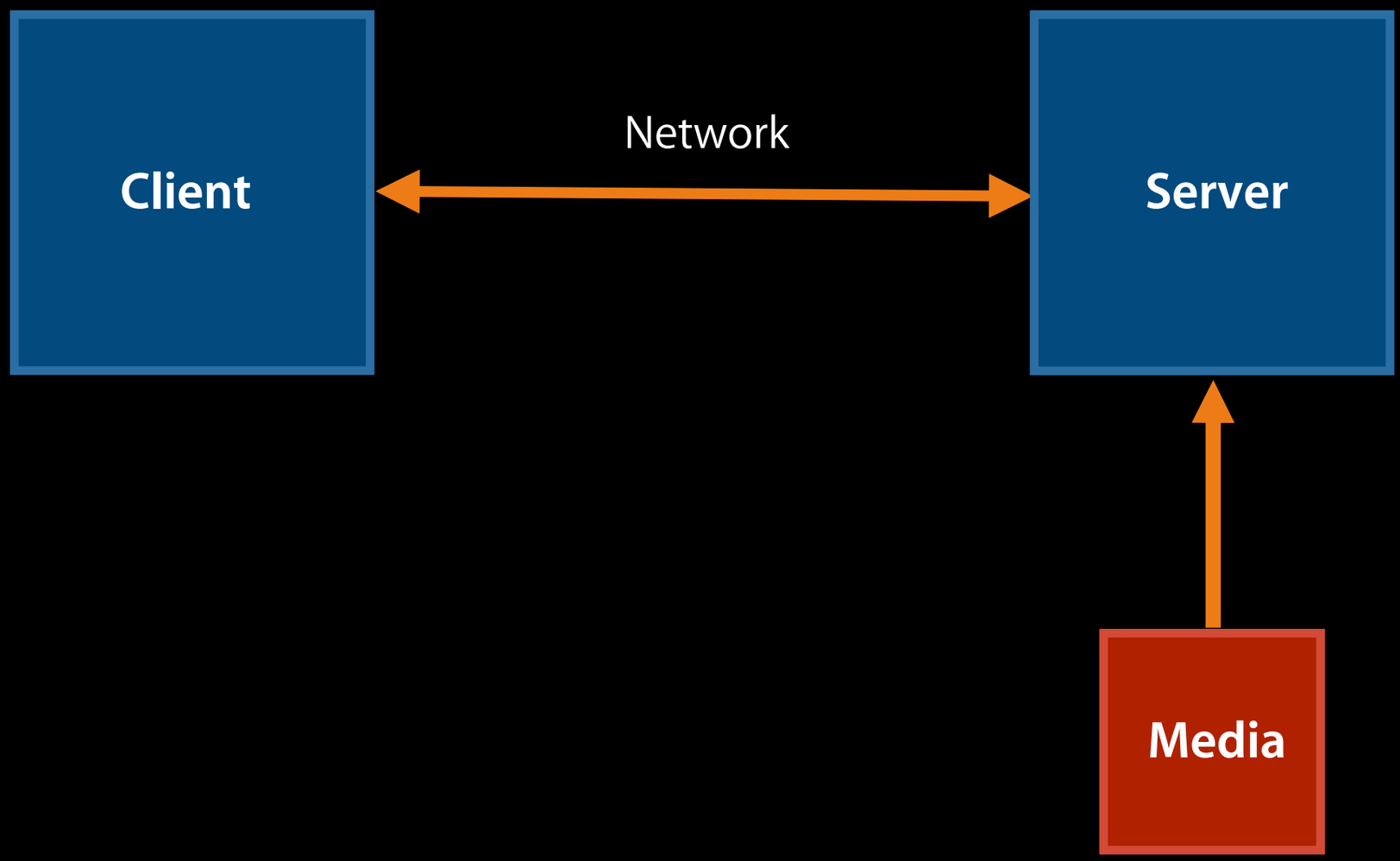
# What You'll Learn

- Introduction to QTSS 5 and QTB
- QTSS initial setup
- Preparing and adding media
- Working with playlists
- Live streaming
- New QTSS Publisher
- Q & A

# What Is Real-time Streaming?

- Moving media from the server to the client over a network for playback in real time
- Uses the RTP (Real-time Transport Protocol) and RTSP (Real-time Streaming Protocol)
- No file is written to the client workstation
- QTSS offers three methods of presentation
  - Video on Demand (VOD)
  - Simulated live (via playlists)
  - Live streams

# Real-time Streaming Basics



# QuickTime Streaming Server

- Based completely on open standards such as RTP and RTSP
- A single server can handle thousand of connections
- Provides support for MPEG-4 streaming
- Instant-On streaming (short buffer time)
- Remote web-based administration
- Similar design to Apache
- Open source version called Darwin Streaming Server
  - Mac OS X, Linux, Solaris, Windows NT/2000 Server

# Server Admin

- New Server Admin application
- Administration and monitoring of QTSS
- IP Binding configuration
- New Relay configuration interface
- Connected users and throughput graph
- Remote Administration

# Demo

**Victor Alexander**
valexander@apple.com

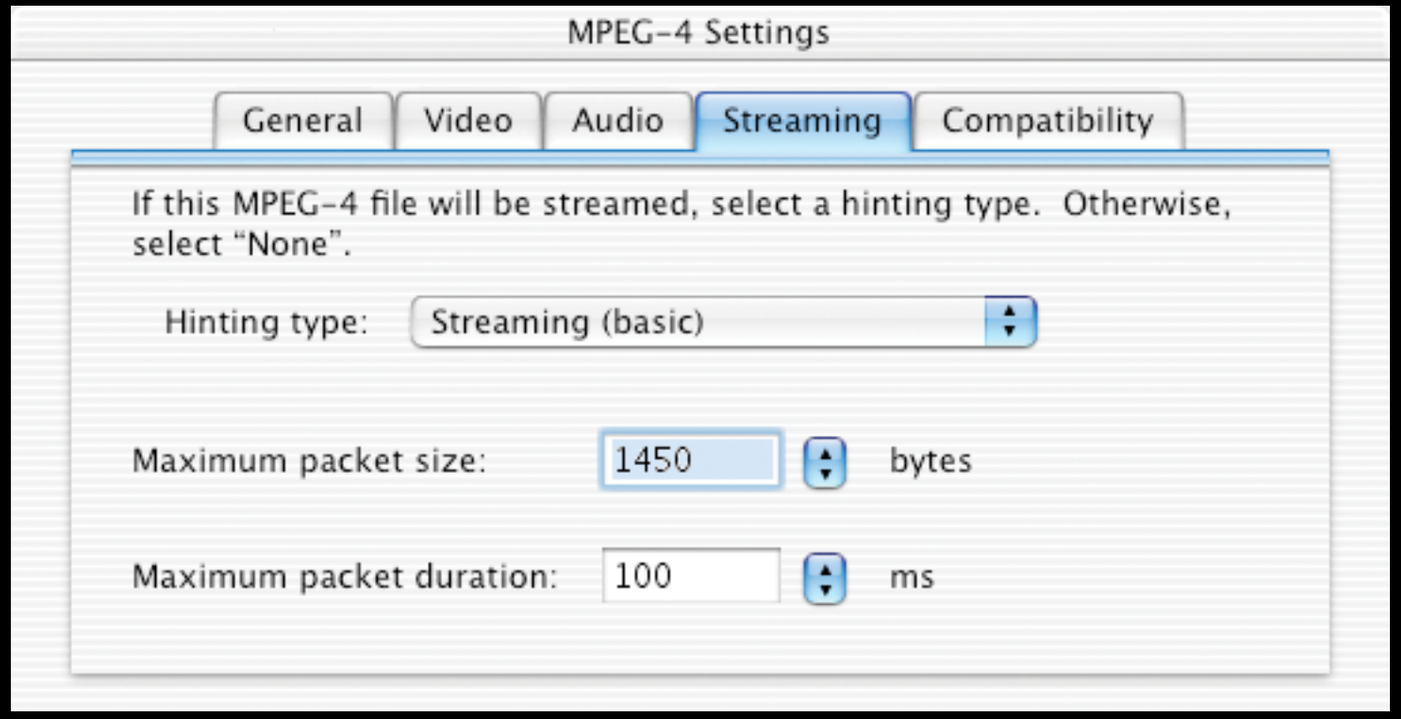
http://developer.apple.com/wwdc2003/urls.html

# Preparing media from streaming

- QuickTime and MPEG-4 (not MP3) media must be processed before real-time delivery
- Perform a process called hinting
  - Adds additional tracks called hint tracks
  - One hint track for each stream-able track in the media
  - Provides instructions for QTSS on how to break up and deliver the streams
- Not difficult, but required

# How to Hint Media

- Simply export the files using QuickTime Pro
- Other compression tools offer hinting options also
- Hinting should be the final step before upload



# Demo

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# Working With Playlists

- QTSS playlists allow you to create a preset list of media to delivery to the audience
- Viewers tune in and begin listening at current track
  - Similar to radio or television broadcast
- Two types of playlists
  - Movie (QuickTime or MPEG-4)
  - MP3 (Icecast-compatible protocols via HTTP)
- Configured via the QTSS Publisher or web-based admin

# Demo

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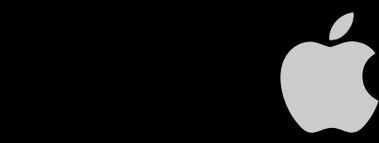
# Live Streaming

- Only way to broadcast events as they happen
- Requires the use of live encoding software
- QuickTime Broadcaster is available as a free download
- Connect to any AV equipment
  - Video camera, microphone, sound board
- Large-scale events require a dedicated machine
- MPEG-4 audio (AAC) and video streaming require a G4 or greater
- Apple uses this for events such as the WWDC keynote



# Live Streaming Setup

# Demo

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# QTSS Publisher

- New in QTSS 5 and Panther Server
- Remote media file management
- Automatic hinting and web preparation of media
- Streaming playlist management
- Annotation editing
- Unix tools

# Wrap Up

# Roadmap—Tuesday

| | The Presidio | Pacific Heights | Haight/ Ashbury | SOMA |
|---|---|---|---|---|
| 9:00 | 701 QuickTime State of the Union | | | |
| 10:30 | | | 702 MPEG-4 Demystified | 703 The Pro in QuickTime Pro |
| 12:00 | | | | |
| 2:00 | | | 704 Introduction to QuickTime Streaming | 705 The Art of MPEG-4 Encoding |
| 3:30 | | | 706 Designing a Distance Learning Solution With QuickTime | 707 QuickTime Media Skins |
| 5:00 | | 708 QuickTime APIs Update | 709 QuickTime on Campus— A Case Study | 710 Preprocessing Principles |

# Roadmap—Wednesday

| | Russian Hill | Pacific Heights | Haight/ Ashbury | SOMA |
|---|---|---|---|---|
| 9:00 | 711 Audio and QuickTime | | 712 QuickTime for the Web | 713 Introduction to QuickTime Interactivity |
| 10:30 | | | 714 Large-Scale Webcasting: Macworld Keynote Case Study | 715 QuickTime Interactivity Tools |
| 12:00 | | | | |
| 2:00 | 716 Advanced QuickTime Programming Techniques | | 717 3GP: Myth Versus Reality | 718 AppleScript and QuickTime |
| 3:30 | | | 719 Administering QuickTime Streaming Server | 720 Content Creation for Mobile Phones: Top 10 Success Factors |
| 5:00 | | | 721 WiFi and 3G: Let the Games Begin | 722 Advanced QuickTime Interactivity |

# Roadmap—Thursday

| | The Mission | Haight/ Ashbury | SOMA |
|---|---|---|---|
| 9:00 | | 723 The Real Story About MPEG-4 Visual Licensing | 724 What's New With QuickTime VR? |
| 10:30 | | 725 QuickTime and Enhanced CDs | 726 Cutting-Edge Projects Using QuickTime VR |
| 12:00 | | | |
| 2:00 | 727 QuickTime Streaming Server Programming | 728 Produce a Listening Party With QuickTime | 729 Industrial-Strength Encoding |
| 3:30 | | FF011 QuickTime Feedback Forum | |
| 5:00 | | | |

# Roadmap—Friday

| | Pacific Heights | The Marina |
|---|---|---|
| 9:00 | | |
| 10:30 | 730 QuickTime Alternative Programming Environments | |
| 12:00 | | |
| 2:00 | | 731 Internet Application Development: The New Frontier |
| 3:30 | | |
| 5:00 | | |

# Who to Contact


**Guillermo Ortiz**
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**Victor Alexander**
Mac OS X Server Software Seed Engineer
valexander@apple.com


http://developer.apple.com/wwdc2003/urls.html

# For More Information

# Reference Library

## Documentation

### QuickTime Streaming Server/Darwin Streaming Server Administrator's Guide
www.apple.com/quicktime/products/qtss/

### General Information
http://www.apple.com/quicktime

### Developer Information
http://developer.apple.com/documentation

### QuickTime Information
http://developer.apple.com/QuickTime

# Reference Library

## Other Resources

**QuickTime Streaming Training Course**
http://train.apple.com

**QuickTime for the Web**
http://www.mkp.com/books_catalog/catalog.asp?ISBN=1-55860-780-3

**Streaming Media Bible**
http://streamingmediabible.com/

**Engineering Task Force (IETF) RFCs**
http://www.ietf.org/rfc/rfc1890.txt (RTP)
http://www.ietf.org/rfc/rfc2326.txt (RTSP)

# Reference Library

## Knowledge Base Articles

**107183: “Reset lost Admin username and password”**
http://docs.info.apple.com/article.html?artnum=107183

**75018: “Access Log Format”**
http://docs.info.apple.com/article.html?artnum=75018

**106735 “Bind QTSS to a Single IP Address”**
http://docs.info.apple.com/article.html?artnum=106735

# Do Not Miss!

## Lab: QuickTime Content Creation

Meet with QuickTime content experts for daily content specific topics that are of special interest to you. Bring your own media and PowerBook. No appointment is needed—first-come, first-served.

**Sacramento Room**

## Lab: QuickTime Development

Meet with Apple's QuickTime engineers. Each day will emphasize a specific QuickTime development topic. Bring your own code and PowerBook. No appointment is needed—first-come, first-served.

**Sacramento Room**

## Lab Hours

| | |
|---|---|
| Monday | 12:00pm to 6:00pm |
| Tuesday | 9:00am to 6:00pm |
| Wednesday | 9:00am to 6:00pm |
| Thursday | 9:00am to 4:30pm |
| Friday | 9:00am to 6:00pm |

# Q&A

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# WWDC 2003

Worldwide Developers Conference